



Assessing and Managing a Patient at Risk for CNS Toxicity: A Skill Building Exercise

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Knowledge Check

Which medication below has a direct impact on the MDR-TB patient's Central Nervous System and puts them at risk for the related toxicity?

- A) Linezolid
- B) Clofazimine
- C) Bedaquiline
- D) Cycloserine

Knowledge Check

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- D) Cycloserine

Cycloserine...WHY?

- The physiological effects are unknown, but Cycloserine is believed to cause the imbalance of certain neurotransmitters in the brain.
- This puts the MDR-TB patient at risk for CNS Toxicity.



Knowledge Check:

What are some s/s of Mental Health CNS toxicity?

- A) Inability to concentrate.
- B) Depression.
- C) Suicidal Ideation
- D) Changes in behavior
- E) All the above

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Other Symptoms
include:

Nightmares

Insomnia

Agitation

Delusions

Hallucinations

Severe Mood Swings

Psychotic Behavior

Depression

Is Cycloserine the only
contributor to these symptoms?

NO

Other
Indications
to Assess
Mental
Health

Existing Mental Illness

Side Effects from medications (GI
Upset)

MDR-TB diagnosis (18-24months
of treatment, prolonged isolation)

Stigma surrounding TB

CAUTION!
Linezolid

**Avoid Serotonin Reuptake
Inhibitors (SSRI's) and Tricyclic
Antidepressants with Linezolid
(risk of Serotonin Syndrome).**

Serotonin Syndrome Symptoms

Usually occur within several hours of taking a new drug or increasing the dose of a drug you're already taking. Signs and symptoms include:

- Agitation or restlessness
- Confusion
- Rapid heart rate and high blood pressure
- Dilated pupils
- Loss of muscle coordination or twitching muscles
- Muscle rigidity
- Heavy sweating
- Diarrhea
- Headache
- Shivering
- Goose bumps

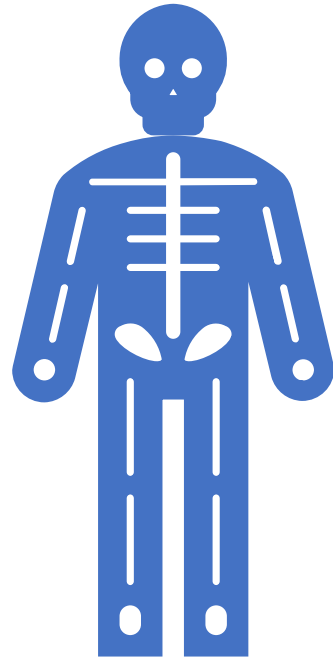
A thorough medical history will help you avoid.



How to monitor

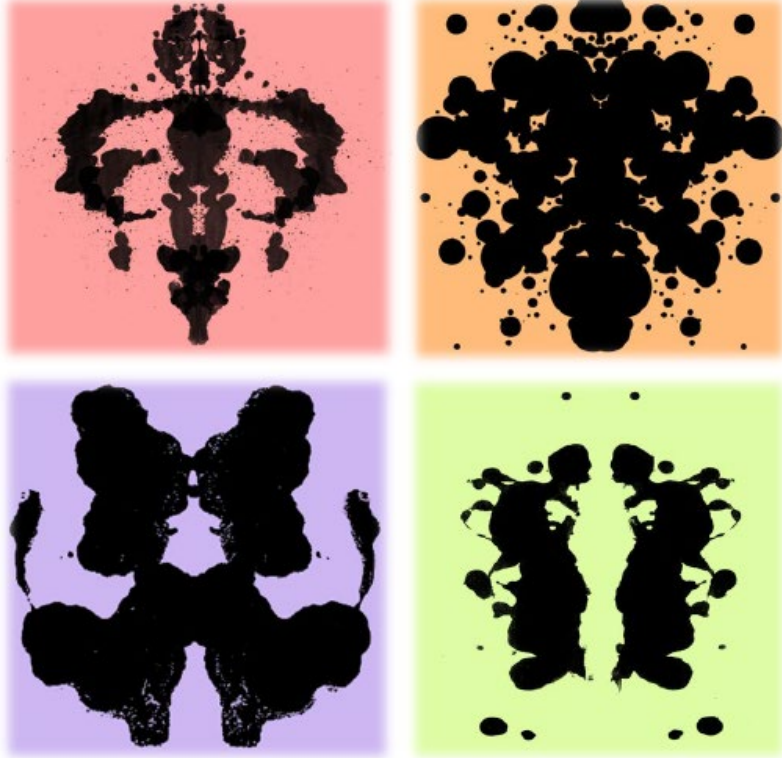
- Serum Drug Level on Cycloserine at 2 weeks and prn for suspected toxicity.
 - Minimize risk of CNS Toxicity
 - Ensure safe use of optimal dose
 - Texas SDOs include processing steps through National Jewish
- TSH
- Serum Creatinine (kidneys clearing medication?)

Nursing Assessment



- Observe for S/S which can be subtle
- A comprehensive tool is needed
(We are not just dealing with depression 😊)
- HNTC Mental Health Assessment Tool Can help
- When do you want to assess your MDR-TB patient's Mental Health?
- Baseline, Monthly and PRN if there is concern
- Refer back to previous assessments to guide your interventions (changes)

MENTAL HEALTH ASSESSMENT TOOL



Tear Here

MENTAL HEALTH ASSESSMENT TOOL		
DEPRESSION DISORDER		
Patient Health Questionnaire (PHQ-2)		
	Yes	No
1. Do you often feel down, depressed, or hopeless?		
2. Do you lack interest in activities, hobbies, and what is happening around you?		
<i>Interpretation: If patient answers "yes" to either of these questions, it may be an indicator that further assessment is needed.</i>		
SUICIDE – SELF HARM		
Suicide Assessment		
	Yes	No
1. Do you feel hopeless about the present or future? If yes move to question 2. If no, go to question 4.		
2. Have you had thoughts about taking your life? If yes move onto question 3.		
3. When did you have these thoughts and do you have a plan to take your life?		
4. Have you ever attempted to harm yourself or attempted suicide?		
<i>Interpretation: If the patient answered "yes" to any of the questions, seek immediate attention from a trained clinician.</i>		
BIPOLAR DISORDER		
Black Dog Institute's Self-Test		
	Yes	No
1. Have you been too depressed to work, or only able to work with difficulty?		
2. Do you experience 'ups' as well as 'downs' with your mood?		
3. Are your ups 'wired' or 'hyper' – more than when you are just happy?		
<i>Interpretation: If patient answered "yes" to all 3 questions, seek referral. If all three answers were not "yes", then the patient may have another condition such as depression or Attention Deficit Hyperactivity Disorder (ADHD). Adjustment of the care plan may be needed. If in question, it is always best to seek referral to a trained clinician.</i>		
SUBSTANCE ABUSE AND DRUG ABUSE		
CAGE-AID (CAGE questions adapted to include drugs)*		
	Yes	No
1. Have you ever felt you should cut down on your drinking or drug use?		
2. Have people annoyed you by criticizing your drinking or drug use?		
3. Have you ever felt bad or guilty about your drinking?		
4. Have you ever had a drink or used drugs first thing in the morning, to steady your nerves, or to get rid of a hangover?		
<i>Interpretation: Yes = 1 pt, No = 0 pts A higher score is a stronger indication of an alcohol or drug problem. A total score of 1 or greater is considered significant and suggests a referral to a professional addiction counselor.</i>		
Miscellaneous Drug and Alcohol Questions		
1. What do you think it looks like if someone has an alcohol or drug problem?		
2. What are your reasons for drinking or using drugs?		
3. What do you think would happen if you decreased or stopped your alcohol or drug use?		
<i>Interpretation: The previous questions may be effective as they allow a means for patient to be more open in discussing their substance use.</i>		
PROVIDER OBSERVATION OF PATIENT		
This section is completed through observations made by the TB program staff.		
The following observations represent behaviors and/or thoughts that identify the need for further assessment and referral to a mental health professional:		
<ul style="list-style-type: none"> • The patient gives inappropriate responses to normal questions • The patient does not exhibit a grasp of reality • The patient indicates that they are a person of authority or power • The patient exhibits an inappropriate or unusual facial expression • The patient exhibits unusual behavior 		
Observations noted:		

Nursing Assessment



- Ask the family
- How well are they sleeping?
- Have you noticed any behavior changes?
- Keep in mind there is stigma around mental illness as well.



Nursing Interventions

- Hold the suspected medication(s)
- If hallucinations are present do not challenge but reassure and orient.
- Seek urgent medical attention.
- Your previous assessment will help the physician ascertain needed information to keep the patient on MDR-TB medications or make appropriate changes.

It's time to
Practice 😊

Groups of 2

Complete the
Mental Health
Assessment
form in it's
entirety

Keep complete
form for future
reference

We will have
time for
questions
once everyone
is finished

Knowledge Check:

What combination of medications put the patient at risk of Serotonin Syndrome?

- A) Serotonin Reuptake Inhibitors (SSRI's) and Linezolid.
- B) Proton Pump Inhibitors and Linezolid
- C) Tricyclic Antidepressants and Linezolid
- D) SSRI's and Tricyclic Antidepressants with Linezolid
- E) None of the above

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What combination of medications put the patient at risk of Serotonin Syndrome?

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Monitoring Behavior and Mood Summary

Anti-TB therapy may contribute to depression and in rare cases suicidal ideation; Whether related to medications or the circumstances that surround the diagnosis.

Depressive symptoms may fluctuate during therapy. (Normal but must monitor)

History of depression may increase the risk of developing depression during treatment.

Serum Drug Levels for Cycloserine

Baseline and monthly Mental Health Assessment Tool Completion